

In the United States Patent and Trademark Office

Appn. Number: _____

Appn. Filed: _____

Applicant(s): Patrick W. Smith

Appn. Title: Hand-Heled Stun Gun For Incapacitating - - -

Examiner/GAU: _____ /324

Mailed: With Application

At: _____

Information Disclosure Statement

Commissioner of Patents and Trademarks
Washington, District of Columbia 20231

Sir:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references cited thereon.

Following are comments on these references pursuant to Rule 98:

U.S. Patent No. 5,618,815 to Ragner. The Ragner reference is cited as illustrating conventional prior art stun gun design criteria. At Column 1, line 40 through Column 2, line 39, Ragner cites the McGraw Hill Science and Technology Encyclopedia as well as a 1969 IEEE SPECTRUM article which explain how to precisely compute the exact combination of current and voltage levels which will trigger cardiac fibrillation. At Column 2, lines 31-32, Ragner concludes based on those long accepted teachings of the prior art that: "...for a three second shock 67 milliamperes is the maximum safe exposure for adults. For a 10 second exposure only 37 milliamperes is acceptable. This represents a maximum non-lethal current for a safe shocking device that can not cause fibrillation." In the following excerpt from his patent, Ragner explains what he characterizes as the "four basic magnitudes of electric shock" and teaches exactly how to use two equations to compute maximum stun gun pulse current and voltage levels and the maximum stun gun operating time interval. Ragner concludes his analysis by stating that stun guns having a pulse repetition rate of from 20 to 40 pulses per second have been found to be very effective "with average output currents less than 3 milliamperes. Which is well below the maximum safe current." Col. 2, lns. 43-46.

U.S. Patent No. 4,253,132 To Cover. At Column 5, lines 50-65, Cover teaches that the output current of his stun gun should not exceed "currents in the twenty to thirty mA range." That low pulse current level limits the pulse energy of the Cover stun gun

to pulse energy levels of only 0.01 joules to 0.5 joules. See Cover '132 patent at Col. 5, line 55-56. Each output pulse from Applicant's claimed stun gun delivers a pulse energy level of from 0.9 to 10 joules, ranges well outside the 0.50 joule maximum pulse energy limit taught by the Cover patent.

U.S. Patent No. 6,404,613 to Dowling. In the Abstract, Dowling teaches a stun gun design for immobilizing dogs or animals which utilizes "a very low, high voltage pulse of high frequency to make its muscles work rapidly, although not efficiently." At Column 4, lns. 19-35, Dowling teaches a stun gun having a pulse current of only three milliamps with a contact time of only one to two seconds, or possibly as long as three seconds. Dowling's low pulse energy three milliamp current limitation is consistent with the teachings set forth in the Ragner patent.

U.S. Patent No. 4,872,084 to Dunning. At Column 1, lines 8-16, Dunning states his objective of designing a stun gun "to provide a non-fatal shock to an assailant." At Column 2, lines 3-6, Dowling explains that he seeks to provide a stun gun with an enhanced power output to thereby generate a stronger, but non-fatal electric shock. At Column 6, lines 44-48, Dowling teaches that his stun gun output power approximates 52,000 volts per inch. At Column 7, lines 12-17, Dowling teaches the use of a 0.02 microFarad capacitor for providing a stun gun with a mini-joule pulse energy rating of from 0.40 to 0.44.

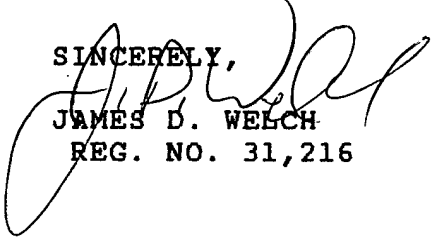
At Column 3, lines 39-42, Dowling states that one objective of his stun gun design is to "obtain the maximum useful non-fatal stun power with a nine volt battery." When taken in the context of the disclosure of the Dowling patent and in the context of the well-recognized current, voltage and time limitations explained in the Ragner patent, it is clear that Dowling teaches nothing more than a conventional low pulse current, low pulse energy stun gun as illustrated above in Fig. A, Section 7 of Applicant's Remarks. Dowling's teachings are therefore fully consistent with Applicant's FIG. 4 comparative performance summary of ten commercially available stun gun products.

Other Patent which are known are:

No. 2,622,200 to Hodgson;
No. 5,579,202 to Tolfson et al.;
No. 5,193,048 to Kaufman et al.;
No. 5,317,155 to King;
No. 5,467,247 to de Anda et al.;
No. 4,843,336 to kuo;
No. 4,539,937 to Workman;
No. 4,691,264 to Schaffhauser et al.;
No. 4,486,807 to Yanez;
No. 4,242,715 to Laird;

No. 4,167,036 to Kenney;
No. 4,162,515 to Henderson et al.;
No. 3,819,108 to Jordan;
No. 4,092,695 to Henerson et al.;
No. 4,541,848 to Masuda;
No. 5,962,806 to Coakley et al.;
No. 4,370,696 to Darrell;
No. 5,831,199 to McNulty Jr. et al.;
No. 5,955,695 to McNulty Sr.;
No. 5,936,183 to McNulty Sr.;

SINCERELY,


JAMES D. WELCH

REG. NO. 31,216

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REV. 7-94

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LIST OF PRIOR ART CITED BY APPLICANT
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GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AA	5698815	12/1997	Ragner	102	502	
AB	4253132	2/1981	Cover	361	232	
AC	6404613	6/2002	Dowling et al	361	232	
AD	2622220	12/1952	Hoganson			
AE	5579202	11/1996	Telfer et al	361	232	
AF	5193048	3/1993	Kaufman et al	361	232	
AG	5317155	3/1994	King	250	324	
AH	5463247	11/1995	de Anda et al	361	232	
AI	4843336	6/1989	Huo	340	521	
AJ	4539937	9/1985	Werkman	119	29	
AK	4691264	9/1987	Schaffhauser et al	361	232	

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
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U.S. PATENT DOCUMENTS													
EXAMINER INITIAL		DOCUMENT NUMBER							DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	4	4	8	6	8	0	7	12/1984	Yanez	361	232	
	AB	4	2	4	2	7	1	5	12/1980	Laird	361	232	
	AC	4	1	6	7	0	3	6	9/1979	Kenney	363	61	
	AD	4	1	6	2	5	1	5	7/1979	Henderson et al.	361	232	
	AE	3	8	1	9	1	0	8	6/1974	Jordan	231	7	
	AF	4	4	9	2	6	9	5	5/1978	Henderson et al.	361	232	
	AG	4	5	4	1	8	4	8	9/1985	Maruda	55	139	
	AH	5	9	6	2	8	0	6	10/1999	Coutley et al	102	502	
	AI	4	3	7	0	6	9	6	6/1983	Darrell	361	232	
	AJ	5	8	3	1	1	9	9	11/1998	McNulty Jr. et al.	89	1.11	
	AK	5	9	5	5	6	9	5	9/1999	McNulty Sr.	89	1.11	

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U.S. PATENT DOCUMENTS

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AA	5936183	8/1999	Mc NULTY ST	89	1.11	
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